Amendments to the Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A method ~~for~~ of compressing image data, comprising ~~the steps of~~:

decomposing the image data into code-blocks of coefficients using a transform, each code-block comprising a plurality of bit-planes of coefficient data from a most significant bit-plane to a least significant bit-plane; ~~and~~

decomposing ones of the bit-planes into multiple contextual data coding passes of coefficient data in the code-blocks, wherein the coding passes include at least one significance propagation coding pass and at least one magnitude refinement coding pass; and

forming an encoded bit-stream by coding ones of the coding passes ~~bit-planes~~ of the coefficient data in the code-blocks according to an arithmetic coding scheme in order to form an encoded bit-stream;

wherein coefficient data from the significance propagation pass and the magnitude refinement pass in at least one bit-plane is included in the encoded bit-stream without arithmetic coding.

Claim 2 (currently amended): A method as claimed in claim 1, wherein the ~~arithmetic coding scheme operates in a plurality of~~ coding passes include at least one normalization coding pass, and the forming comprises arithmetic coding coefficient data from the normalization coding pass ~~and wherein at least one of the arithmetic coding passes for the coefficient data from said at least one bit-plane is not performed during the image data compression~~.

Claim 3 (original): A method as claimed in claim 2, wherein coefficient data from bit-planes $p<p_0-K$ are written directly into the encoded bit-stream without arithmetic coding,

wherein p_0 denotes the most significant bit-plane of the code block in which any sample therein becomes contextually significant during arithmetic coding and K is an integer parameter.

Claim 4 (original): A method as claimed in claim 3, wherein $K = 3$.

Claim 5 (original): A method as claimed in claim 1, wherein the method for compressing image data is based on embedded block coding with optimized truncation and employs a Wavelet transform.

Claim 6 (currently amended): An image data compression system, comprising:

a decomposition processor which decomposes the image data into code-blocks of coefficients using a transform, each code-block comprising a plurality of bit-planes of coefficient data from a most significant bit-plane to a least significant bit-plane; and

an arithmetic coder coupled to the decomposition processor, wherein the arithmetic coder decomposes ones of the bit-planes into multiple contextual data coding passes of coefficient data in the code-blocks and ~~which~~ forms an encoded bit-stream by coding ~~bit-planes~~ones of the coding passes of the coefficient data in the code-blocks according to an arithmetic coding scheme, and the coding passes include at least one significance propagation coding pass and at least one magnitude refinement coding pass;

wherein the arithmetic coder is constructed such that coefficient data from the significance propagation pass and the magnitude refinement pass in at least one bit-plane is not subjected to said arithmetic coding scheme so as to be included in the encoded bit-stream without arithmetic coding.

Claim 7 (currently amended): An image data compression system as claimed in claim 6, wherein the ~~arithmetic coding scheme operates in a plurality of~~ coding passes include at least one normalization coding pass, and the forming comprises arithmetic coding coefficient data from the normalization coding pass~~, and wherein at least one of the arithmetic coding passes is~~

~~bypassed for the coefficient data from said at least one bit-plane during the image data compression~~.

Claim 8 (original): An image data compression system as claimed in claim 7, wherein the arithmetic coder operates such that coefficient data from bit-planes $p<p_0-K$ are written directly into the encoded bit-stream without arithmetic coding, wherein p_0 denotes the most significant bit-plane of the code block in which any sample therein becomes contextually significant during arithmetic coding and K is an integer parameter.

Claim 9 (original): An image data compression system as claimed in claim 8, wherein $K = 3$.

Claim 10 (previously presented): An image data compression system as claimed in claim 6, wherein the arithmetic coder is based on embedded block coding with optimized truncation and the decomposition processor employs a Wavelet transform.

Claim 11 (canceled)

Claim 12 (previously presented): The method of claim 1, wherein arithmetically coded bit-plane data is interleaved with the bit-plane coefficient data included in the bit-stream without arithmetic coding.

Claims 13-18 (canceled)

Claim 19 (new): Apparatus for compressing image data, comprising:

means for decomposing the image data into code-blocks of coefficients using a transform, each code-block comprising a plurality of bit-planes of coefficient data from a most significant bit-plane to a least significant bit-plane;

means for decomposing ones of the bit-planes into multiple contextual data coding passes of coefficient data in the code-blocks, wherein the coding passes include at least one significance propagation coding pass and at least one magnitude refinement coding pass; and

means for forming an encoded bit-stream by coding ones of the coding passes of the coefficient data in the code-blocks according to an arithmetic coding scheme in order to form an encoded bit-stream, wherein coefficient data from the significance propagation pass and the magnitude refinement pass in at least one bit-plane is included in the encoded bit-stream without arithmetic coding.

Claim 20 (new): The apparatus of claim 19, wherein the coding passes include at least one normalization coding pass, and the means for forming arithmetic codes coefficient data from the normalization coding pass.

Claim 21 (new): The apparatus of claim 19, wherein the means for forming writes coefficient data from bit-planes $p<p_0-K$ directly into the encoded bit-stream without arithmetic coding, wherein p_0 denotes the most significant bit-plane of the code block in which any sample therein becomes contextually significant during arithmetic coding and K is an integer parameter.

Claim 22 (new): The apparatus of claim 21, wherein $K = 3$.

Claim 23 (new): A computer-readable medium for compressing image data, the computer-readable medium storing computer-readable instructions causing a computer to perform operations comprising:

decomposing the image data into code-blocks of coefficients using a transform, each code-block comprising a plurality of bit-planes of coefficient data from a most significant bit-plane to a least significant bit-plane;

decomposing ones of the bit-planes into multiple contextual data coding passes of coefficient data in the code-blocks, wherein the coding passes include at least one significance propagation coding pass and at least one magnitude refinement coding pass; and

forming an encoded bit-stream by coding ones of the coding passes of the coefficient data in the code-blocks according to an arithmetic coding scheme in order to form an encoded bit-stream, wherein coefficient data from the significance propagation pass and the magnitude refinement pass in at least one bit-plane is included in the encoded bit-stream without arithmetic coding.

Claim 24 (new): The computer-readable medium of claim 23, wherein the coding passes include at least one normalization coding pass, and the computer-readable instructions cause the computer to arithmetically code coefficient data from the normalization coding pass.

Claim 25 (new): The computer-readable medium of claim 23, wherein the computer-readable instructions cause the computer to write coefficient data from bit-planes $p<p_0-K$ directly into the encoded bit-stream without arithmetic coding, wherein p_0 denotes the most significant bit-plane of the code block in which any sample therein becomes contextually significant during arithmetic coding and K is an integer parameter.

Claim 26 (new): The computer-readable medium of claim 24, wherein $K = 3$.